



US Army Corps
of Engineers
Fort Worth District

Mitigation and the Section 404 Regulatory Program

March 6, 1998



Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill material into waters of the United States, including wetlands. Thus, Department of the Army authorization is normally required for discharges associated with such ground disturbing activities as filling, grading, excavation, and mechanized land clearing when they occur in waters of the United States. When the USACE reviews a project that would require Department of the Army authorization, the evaluation process typically includes a determination of whether the applicant has taken sufficient measures to mitigate the project's likely adverse impacts to the aquatic ecosystem. Mitigation is a three-step sequential process, with the steps employed in the following order:

Avoid: Take all appropriate and practicable measures to avoid those adverse impacts to the aquatic ecosystem that are not absolutely necessary.

Minimize: Take all appropriate and practicable measures to minimize those adverse impacts to the aquatic ecosystem that cannot reasonably be avoided.

Compensate: Implement appropriate and practicable measures to compensate for adverse project impacts to the aquatic ecosystem that cannot reasonably be avoided or minimized. Known as compensatory mitigation.

While this sequential mitigation process is normally applied only during the individual permit process, most nationwide and regional general permits do require that discharges of dredged and fill material into waters of the United States be avoided and minimized to the maximum extent practicable, unless the District Engineer approves a compensation plan that is more beneficial to the environment than minimization or avoidance measures undertaken at the project site. The District Engineer will normally require, on a case-by-case basis, all practicable and appropriate compensation as a condition of Department of the Army authorization.

The purpose of compensatory mitigation is to replace those aquatic ecosystem functions that would be lost or impaired because of an authorized activity. The amount and type of compensatory mitigation required for a particular activity should be commensurate with the nature and extent of the activity's adverse impact on aquatic functions and be practicable in terms of cost, existing technology, and logistics, in light of the overall project purpose. Aquatic functions, which are most simply defined as "the things that aquatic systems do," include sediment trapping and nutrient removal; flood storage and conveyance; erosion control; providing habitat for fish and wildlife, including endangered species; groundwater recharge; water supply; production of food, fiber, and timber; and recreation. The number and extent of these and other aquatic functions vary widely among the myriad aquatic sites found across the Fort Worth District.

Compensatory mitigation may include the restoration, enhancement, creation, or, in exceptional cases, preservation of wetlands and other aquatic resources. **Restoration** is the re-establishment of functions and characteristics that have either ceased to exist or exist in a substantially degraded state; **enhancement** includes activities conducted on, or adjacent to, existing wetlands and other aquatic resources that are intended to enhance one or more aquatic functions such as conversion to a less destructive land use or

improvement of the existing plant community; **creation** is the establishment of a wetland or other aquatic resource where one did not formerly exist; and **preservation** is the protection of existing ecologically important wetlands and other aquatic resources in perpetuity by implementing certain legal and physical mechanisms. Preservation is normally appropriate only in exceptional cases, such as when a high-value aquatic resource would be lost to lawful activities were it not protected by preservation. Restoration and enhancement are preferred to creation because they are normally less expensive, more successful, and less likely to adversely affect existing upland and open water habitats. A compensatory mitigation project that involves ground disturbing activities in waters of the United States may itself require Department of the Army authorization.

It is important to remember that the goal is to replace the affected aquatic functions to the extent that they would be lost or impaired by the proposed activity, that is, compensation should generally be “in-kind.” Compensation should be provided as close to the site of the adverse impacts as practicable to minimize losses to the local aquatic system. However, off-site compensation may be more appropriate when the compensation cannot reasonably be conducted at the impact site or would be more beneficial to the aquatic ecosystem if conducted at another location. In some cases, it may be acceptable to provide partial compensation at multiple locations. For example, it may be necessary to compensate for flood storage impacts on site while compensating for wildlife habitat impacts at another location.

Two general approaches to implementing compensatory mitigation are project-specific and third-party compensation projects. A project-specific compensation project is conducted to compensate for the adverse impacts of a single activity requiring Department of the Army authorization. A project-specific compensation project is typically designed and implemented by the permittee in conjunction with the authorized activity and is often located on-site or near the authorized activity. The permittee is also responsible for monitoring and assuring the success of the mitigation project.

The third-party approach consolidates compensation for multiple projects requiring Department of the Army authorization into one or more off-site mitigation projects. This approach is distinguished from project-specific compensation in that a third party typically accepts the responsibility of designing, implementing, and assuring the success of compensatory mitigation for the permittee. This approach involves such activities as mitigation banking, combined or joint mitigation projects, and in-lieu fee and fee-based trusts. A brief description of each follows:

Mitigation banking: Mitigation systems that provide consolidated off-site compensation for numerous authorized activities in advance of adverse project impacts. A mitigation bank is developed and operated under the terms of a mitigation banking instrument among the bank owner, the USACE, and other natural resource agencies. In most cases, Department of the Army authorization is also required to develop the bank. For further information on mitigation banking, refer to "Federal Guidance for the Establishment, Use and Operation of Mitigation Banks," published in the Federal Register on November 28, 1995 (Vol. 60, No. 228, pp. 58605-58614).

Combined or joint-project mitigation: Mitigation systems that simultaneously provide compensatory mitigation for more than one permitted project that adversely impact the aquatic ecosystem. Unlike a mitigation bank, a joint project typically does not provide compensation in advance of project impacts. Each use of a joint mitigation project typically requires USACE approval.

In-lieu fee and fee-based mitigation: Mitigation systems that provide a Department of the Army permittee an opportunity to pay a fee in lieu of conducting project-specific compensation activities. Fees are used to fund projects designed to restore, enhance, create, or, in some cases, preserve aquatic ecosystem functions. These projects should reflect both the nature and extent of aquatic functions adversely affected by permitted activities. Typically, in-lieu systems pertain to unspecified future mitigation projects, while fee-based systems involve specific, identified mitigation projects, that are either complete or under development as fees are collected.

Department of the Army permittees are responsible for developing a mitigation plan and submitting it to the USACE. An appropriate real estate arrangement, such as a deed restriction, will normally be required to achieve long-term success of a mitigation plan or to provide sufficient compensation for adverse project impacts. A mitigation plan should generally include at a minimum:

1. A complete description of efforts made to avoid and minimize adverse project impacts to the aquatic ecosystem. Include impacts to local hydrology, upstream and downstream aquatic resources, and wildlife habitat.
2. A thorough description of the proposed compensatory mitigation area, including a vicinity map, site map, aerial and on-site photographs (if available), land use history, soils, local hydrology, and dominant vegetation.
3. A jurisdictional determination, including a wetland delineation (if appropriate) conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual. The jurisdictional determination report should include a site description, field data sheets, summary of findings, and a detailed map of the site indicating the location and extent of all waters of the United States, including wetlands.
4. A detailed description of the nature and location of all proposed ground disturbing activities and structures associated with the compensatory mitigation project. Include information about grading, filling, planting, land clearing, road construction, size and spacing of culverts and bridges, fences, buildings, utility lines, intake and outfall structures, and disposal and borrow area locations. Provide plan and cross-section drawings of all pertinent work and structures and the volume and type of material to be discharged. Include both temporary and permanent activities and structures.
5. For work that would create new aquatic resources or modify existing aquatic resources, provide as appropriate:
 - a. A description of the proposed hydrology showing that it is adequate for the site, sufficient suitable quality water will be available during appropriate seasons, and the site would be correctly graded to provide appropriate hydrology and not cause adverse impacts to the site such as erosion of streams and channels;
 - b. A soil description, including the source and type of substrate to be used, demonstrating it is able to support the proposed plantings and hydrology;
 - c. A planting plan that includes a list of native locally adapted species to be used, density of planting, planting method, planting schedule, and planting survival success criteria.

6. A description of how the mitigation would appropriately compensate for adverse project impacts to aquatic ecosystem functions.
7. A statement disclosing whether any species listed as threatened or endangered under the Endangered Species Act might be affected by, or found in the vicinity of, the proposed mitigation project.
8. Any other relevant information such as information on cultural resources, the proximity of the project to ecologically sensitive areas, and project impacts on the local/regional hydrology.
9. A proposal for monitoring the success of the proposed mitigation plan, including the name and telephone number of the responsible party, success criteria, and a compliance reporting program. Generally, monitoring should continue at least two years after all mitigation project activities have been completed and planting survival requirements have been achieved. Include all appropriate contingency plans and address provisions for long-term operations and maintenance.

Mitigation proposals are evaluated by Fort Worth District Regulatory Program staff in consultation with other natural resources agencies including the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Natural Resources Conservation Service, Texas Natural Resource Conservation Commission, Texas Parks and Wildlife Department, and Railroad Commission of Texas.

For further information about compensatory mitigation or our regulatory program, contact the Regulatory Branch at: U.S. Army Corps of Engineers; Regulatory Branch, CESWF-EV-R; P.O. Box 17300; Fort Worth, Texas 76102-0300. You may visit the Regulatory Branch in Room 3A37 of the Federal Building at 819 Taylor Street in Fort Worth between 8:00 A.M. and 3:30 P.M., Monday through Friday. Telephone inquiries should be directed to (817) 978-2681.